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| 09/914,251      | 08/24/2001  | Hisaki Sumimura      |                     | 2237             |

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ALEXANDRIA, VA 22314

EXAMINER

HOFFMANN, JOHN M

ART UNIT PAPER NUMBER

1731

DATE MAILED: 12/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/914,251

Applicant(s)

SUMIMURA ET AL.

Examiner

John Hoffmann

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 3,5,9 and 11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3,5,9 and 11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Objections***

Claim 9 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. .

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3, 5, 9 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3, last line: there is no antecedent basis for "the sodium salt"

Claim 5: there is no antecedent basis for "the remainder".

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 5, 9 and 11 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over George 5411803.

George uses a slurry to coat particles. The slurry reads on the claims.

**An aqueous carbon-containing unshaped refractory,**

See col. 8, line 31, George uses a slurry to coat particles: The slurry reads on the claims. George's slurry contains refractories. The slurry itself may not be a refractory – but then again neither is Applicant's material – because it still has water in it. It is deemed that any material that contains a refractory compound reads on the preamble. The present specification has not specified any definition for the mixture that would exclude the George slurry.

**comprising 3 to 15 % by weight based on the total weight of the refractory of a carbon black material**

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Looking at col. 14, lines 18- 45: The total ingredients of the slurry is:

60 parts sodium silicate solution

20 parts water

25 parts clay

15 parts titanium dioxide

3 parts ZFP

2 parts borax

Col. 14, lines 45-46 indicates 2000 parts substrate material. Based on that, there can be 2-4 parts carbon black (see col. 9, lines 4-16). And up to 2 parts of dispersant (col. 14, line 27).

Adding all these ingredients, the total batch has 129-131 total parts which corresponds to a carbon black content of 3-4.6%.

**having a specific surface area according to a nitrogen adsorption method of 24 to 30 m<sup>2</sup>/g,**

See Ozawa 5354610 col. 8, lines 47-50 which shows that Black Pearls 130 (which George teaches) has the claimed surface area. Alternatively, it teaches that carbon particles of 75 nanometer has the claimed surface area. (This reference is cited to show what is inherent in George). Although George teaches using a combination of carbon blacks, George also reasonable teaches that one

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can use a single carbon black. The combination of blacks is merely a "preferred" embodiment. Although it is not indicated as being determined by a nitrogen adsorption method – such is not given much weight, because it does not specify a specific "method". In other words, the claim language is so broad that it would read on any nitrogen adsorption method – and one could reasonably construct such a method so that the George carbon black gets the desired result.

**and further comprising 0.02 to 0.03 % by weight of beta-naphthalenesulfonic acid-formaldehyde condensate as the sodium salt per 1 % of the carbon black material.**

See col. 9, lines 20-31 of George. Edwards 4336546, col. 11, lines 25-27 also indicates that the George dispersant is inherently the claimed material.

A 0.02% per 1% in the George 3.0% lower limit would correspond to 0.06% of the 129 parts – or .0774 parts per 2000 gram substrate or 0.0387 grams per kg. A 0.03% per 1% of the George 4.6% upper limit would correspond to 0.138 % of the 131 parts - or 0.18078 parts per 2000 gram - or 0.09039 gram per kilogram.

These values 0.0387-0.0904 is substantially the same as George's preferred range of 0.03 –0.10.

If this George range (for two carbons) does not constitute a teaching for the same range with a single carbon: It would have been obvious to use a value within the 0.0387-0.0904 range, because it is clear it would work (see George col. 9, lines 26-28), it is essentially in the middle of the of the broader George

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range, and because it is preferable with double-carbon mix, one would assume it would likely be preferable for a single carbon embodiment.

Claim 5: The titanium dioxide is about 11.5% of the George slurry. It is not stated if it is an ultra fine. From the paragraph spanning cols 8-9 of George, it is clear that the pigments are smaller than 10 microns. It would have been obvious to have the titanium particles to be as small as reasonably possible, because the smaller the particles, the more evenly they can disperse through the slurry. One would realize that large particles would have the appearance of large particles rather than serving as a pigment.

Claim 9: For the refractory to be dried and still be the (aqueous) refractory – the hypothetical drying must be less than complete. Thus it is deemed that the George refractory would have less than 13% porosity (if any) if the drying was only such that 10% of the water was removed. IT is noted that the claim is not a method claim and does not require a step of drying. Further the claim is not directed to a dried refractory. Claim 11 is met for the same reasons.

### ***Response to Arguments***

Applicant's arguments have been fully considered and are persuasive.

Therefore, the rejection has been withdrawn.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Seiya Nishi, Weygandt, Terazono, Ayala, Detrano, Cullen, and Miano are cited as they are further evidence that the claimed features are common.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

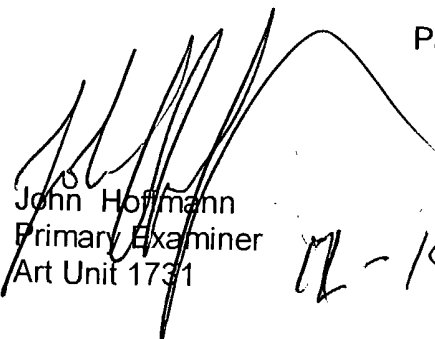
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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John Hoffmann  
Primary Examiner  
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12-14-04

jmh